PRELIMINARY

CITY OF LYNNWOOD
LIFT STATION 8

FALL 2014
VOLUME 2 OF 2

PROJECT DATA

ADDRESS: 19400 56TH AVE W, LYNWOOD, WA 98036

PROJECT DESCRIPTION:
THE LYNWOOD SEWER IMPROVEMENTS PROJECT WILL INCLUDE A NEW 2500 GPM PUMP STATION, INCLUDING MAINTENANCE BUILDING, DECANT FACILITY, EMERGENCY GENERATOR, AND ODOR CONTROL EQUIPMENT, APPROXIMATELY 60 LF OF 12" SEWER FORCE MAIN, APPROXIMATELY 10 LF OF 16" GRAVITY SEWER MAIN, AND APPROXIMATELY 300 LF OF 8" GRAVITY SEWER MAIN.

TYPE OF CONSTRUCTION PER IBC: TYPE V, NON-SPRINKLERED

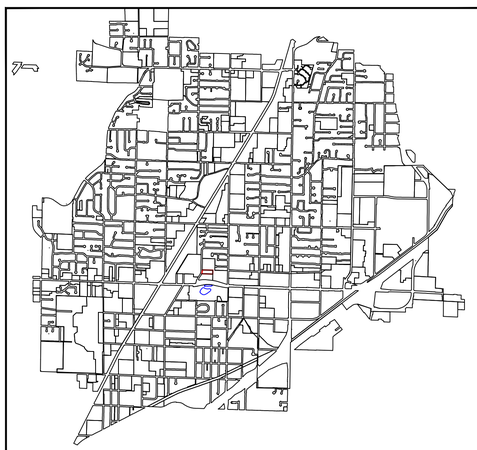
TOTAL BUILDING AREA: 3990 SF

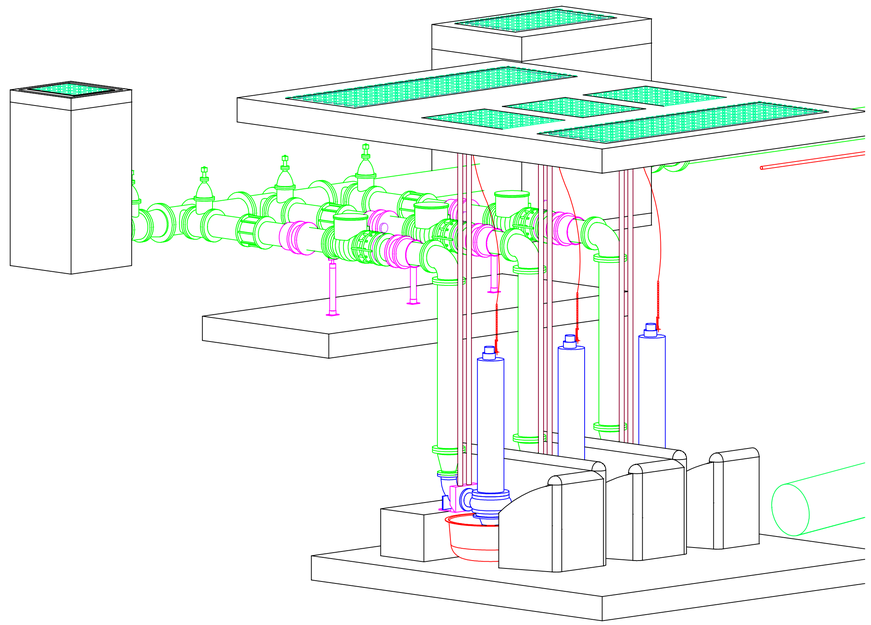
OCCUPANCY CLASSIFICATION PER IBC: UTILITY AND MISCELLANEOUS GROUP U

OCCUPANCY LOAD: N/A

** SEE DWG NO. S05 FOR REQUIRED SPECIAL INSPECTIONS AND DESIGN CODES **

VICINITY MAP





MAYOR
NICOLA SMITH

PUBLIC WORKS DIRECTOR
WILLIAM A. FRANZ

CITY COUNCIL
LOREN SIMMONDS
SID ROBERTS
VAN AUBUCHON
M. CHRISTOPHER BOYER
IAN COTTON
BENJAMIN GOODWIN
RUTH ROSS

SHEET LIST TABLE

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6	STRUCTURAL FOUNDATION PLAN	S01
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RICHARD L. BALLARD — STATE OF WASHINGTON — 32878 — REGISTERED PROFESSIONAL ENGINEER
EDWIN HALIM — STATE OF WASHINGTON — 38889 — REGISTERED PROFESSIONAL ENGINEER
RYAN J. PESSONS — STATE OF WASHINGTON — 49451 — REGISTERED PROFESSIONAL ENGINEER
JON MARSHALL CONDE — STATE OF WASHINGTON — 44672 — REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER M. ROBERTS — STATE OF WASHINGTON — 45317 — REGISTERED PROFESSIONAL ENGINEER
TONY V. PARDI — STATE OF WASHINGTON — 26978 — REGISTERED PROFESSIONAL ENGINEER

DESIGNED BY:

TRANE®

RH2 ENGINEERS PLANNERS SCIENTISTS

LYNNWOOD WASHINGTON

\DATA\TRANE\114-0507\CAD\LSB-0-COV.DWG

GENERAL NOTES

1. CONTRACTOR SHALL CALL 1-800-424-5555 FOR UTILITY LOCATES 48 HOURS BEFORE CONSTRUCTION. THE CONTRACTOR SHALL HAVE ALL UTILITIES LOCATED BY THE APPROPRIATE UTILITY LOCATING PROFESSIONALS, PRIOR TO AND DURING CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND THE UTILITY COMPANY WHEN A CONFLICT OCCURS OR WHEN A CONFLICT IS ANTICIPATED.
2. CONTRACTOR-INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ENGINEER FOR APPROVAL PRIOR TO IMPLEMENTATION OR CONSTRUCTION.
3. CONTRACTOR MUST KEEP A COPY OF THE APPROVED PLANS ON-SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
4. THE CONTRACTOR IS RESPONSIBLE FOR PREPARING COMPLETE AS-CONSTRUCTED (AS BUILT) RECORDS, INCLUDING AS-BUILT SURVEYING.
5. CONSTRUCTION OF IMPROVEMENTS SHALL CONFORM TO THE CURRENT EDITION OF THE CITY OF LYNNWOOD AND KING COUNTY STANDARDS AND THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, 2010 EDITION, AS ISSUED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION AND THE AMERICAN PUBLIC WORKS ASSOCIATION. THESE DOCUMENTS HEREINAFTER REFERRED TO AS THE STANDARD SPECIFICATIONS.
6. THE CONTRACTOR IS REQUIRED TO PROVIDE ALL CONSTRUCTION STAKING ON THIS PROJECT INCLUDING THE PREPARATION OF COMPLETE CONSTRUCTION RECORDS. STAKING FOR GRADES AND ALIGNMENT SHALL BE PERFORMED BY AN ENGINEERING OR SURVEYING FIRM LICENSED AND CAPABLE OF PERFORMING SUCH WORK. RIGHT OF WAY AND EASEMENT LIMITS MUST BE CLEARLY IDENTIFIED IN THE FIELD DURING CONSTRUCTION.
7. A PRECONSTRUCTION CONFERENCE AND 24-HOUR NOTICE WILL BE REQUIRED PRIOR TO STARTING CONSTRUCTION OR RESTARTING CONSTRUCTION AFTER A PERIOD OF MORE THAN 5 DAYS OF NO WORK BEING PERFORMED.
8. CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY CONSTRUCTION TO CONDITIONS EQUAL OR BETTER TO THOSE FOUND PRIOR TO CONSTRUCTION.
9. SEE DIVISION 1 OF THE SPECIFICATIONS FOR PERMIT INFORMATION.
10. THE CONTRACTOR SHALL DETERMINE THE SCOPE, TYPE, SIZE, QUANTITY, METHOD OF INSTALLATION, OPERATION, AND REMOVAL OF THE DEWATERING SYSTEM NECESSARY TO KEEP THE EXCAVATION SITE DEWATERED TO STABILIZE THE SOILS FOR CONSTRUCTION. THE DEWATERING SYSTEM MUST BE LOCATED WITHIN THE CONSTRUCTION OR SEWER EASEMENTS.
11. THE CONTRACTOR SHALL DISCHARGE WATER FROM THE DEWATERING SYSTEM IN ACCORDANCE WITH THE REQUIREMENTS OF STATE AND LOCAL REGULATIONS AND THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS. AT NO TIME SHALL SILT LADEN WATER BE DISCHARGED OFF SITE. SEE EXISTING SITE AND TESC PLAN FOR ADDITIONAL STORMWATER NOTES.
12. THE CONTRACTOR SHALL CLEAN UP ALL AREAS AFFECTED BY THEIR ACTIVITIES TO THE SATISFACTION OF THE CITY REPRESENTATIVE BY THE END OF EACH WORKING DAY OR MORE FREQUENTLY IF REQUIRED BY THE CITY REPRESENTATIVE. THIS INCLUDES REMOVAL OF ALL DUST, MUD, ROCKS, ASPHALT DEBRIS, AND REFUSE FROM STREETS, SIDEWALKS, DRIVEWAYS, AND ANY OTHER AREAS AFFECTED BY THE CONSTRUCTION ACTIVITIES. FAILURE TO CLEAN UP TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE WILL NECESSITATE A SHUTDOWN OF THE PROJECT UNTIL CLEANUP IS PROPERLY PERFORMED. DAILY CLEANUP IS AN INTEGRAL PART OF EROSION AND POLLUTION CONTROL.
13. THE EXISTING LIFT STATIONS SHALL NOT BE PERMANENTLY TAKEN OUT OF SERVICE, UNTIL THE LIFT STATION CONSTRUCTED UNDER THIS CONTRACT HAS BEEN INSTALLED, TESTED, AND APPROVED IN WRITING BY THE OWNER. A TEMPORARY PUMPING SYSTEM CAN BE INSTALLED DURING CONSTRUCTION TO ALLOW FOR CONSTRUCTION OF THE PROPOSED LIFT STATION TO BE COMPLETED. THE CONTRACTOR SHALL PROVIDE A PLAN TO THE OWNER FOR APPROVAL THAT DETAILS THE PROPOSED METHOD OF KEEPING THE LIFT STATION OPERATIONAL DURING THE CONSTRUCTION WORK. INSTALLATION OF THE TEMPORARY PUMPING SYSTEM SHALL NOT BEGIN UNTIL WRITTEN APPROVAL HAS BEEN OBTAINED FROM THE OWNER. A HIGH LEVEL ALARM FLOAT SHALL BE CONNECTED TO THE EXISTING TELEMETRY SYSTEM FOR PROVIDING NOTIFICATION TO THE OWNER IF THE TEMPORARY SYSTEM HAS FAILED. THE CONTRACTOR SHALL BE AVAILABLE TO RESPOND TO ANY TEMPORARY SYSTEM FAILURE.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES REQUIRED TO PERFORM THE WORK.

SEWER FORCE MAIN CONSTRUCTION NOTES

1. FORCE MAIN TRENCH SECTION AND ALL EXCAVATED AREAS SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THESE CONTRACT DOCUMENTS AND WITH SECTIONS 7-9.3(10) AND 7-9.3(11) OF THE STANDARD SPECIFICATIONS. COMPACTION TESTING SHALL BE REQUIRED DURING BACKFILLING OPERATIONS ON ALL 24" AND LARGER PIPE, ALL OPEN CUTS AND/OR CROSSINGS WITHIN PAVED OR TRAVELED AREAS AND AT THE DISCRETION OF THE OWNER. IF TRENCH BACKFILL DOES NOT MEET COMPACTION REQUIREMENTS, CONTRACTOR SHALL EXCAVATE, RE-COMPACT AND RETEST MATERIAL AT CONTRACTOR'S EXPENSE.
2. OWNER APPROVED THRUST RESTRAINTS ARE REQUIRED FOR ALL UNRESTRAINED FITTINGS. THRUST BLOCKING IS THE PREFERRED METHOD UNLESS OTHERWISE SHOWN ON THE PLANS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY PIPE JOINT RESTRAINT SO THAT THE PIPE DOES NOT SEPARATE DUE TO THERMAL EXPANSION, UNRESOLVED THRUST FORCES, OR DESTABILIZATION OF STEEP SLOPES.
3. AT POINTS WHERE EXISTING THRUST BLOCKING EXISTS, MINIMUM CLEARANCE OF UNDISTURBED SOIL BETWEEN THE CONCRETE BLOCKING AND PROPOSED BURIED UTILITIES OR STRUCTURES SHALL BE 5 FEET.
4. THE CONTRACTOR SHALL PERFORM PRESSURE TESTING IN ACCORDANCE WITH THE SPECIFICATIONS, UNLESS OTHERWISE APPROVED. THE OWNER HAS DISCRETION TO MODIFY THE TESTING REQUIREMENTS AS HE DEEMS APPROPRIATE.

TESC GENERAL NOTES

1. CONTRACTOR SHALL PROVIDED EROSION AND SEDIMENTATION CONTROL MEASURES AND FACILITIES PER APPENDIX D OF THE KING COUNTY SURFACE WATER DESIGN MANUAL (2009), CITY STANDARDS AND THESE CONTRACT DOCUMENTS.
2. ANY DISCHARGE OF SEDIMENT-LADEN RUN-OFF OR OTHER POLLUTANTS TO WATERS OF THE STATE IS IN VIOLATION OF CHAPTER 90.48, WATER POLLUTION CONTROL, AND WAC 173-201A, WATER QUALITY STANDARDS FOR SURFACE WATERS OF THE STATE OF WASHINGTON, AND IS SUBJECT TO ENFORCEMENT ACTION.
3. DURING CONSTRUCTION, ALL RELEASES OF OILS, HYDRAULIC FLUIDS, FUELS, OTHER PETROLEUM PRODUCTS, PAINTS, SOLVENTS, AND OTHER DELETERIOUS MATERIALS MUST BE CONTAINED AND REMOVED IN A MANNER THAT WILL PREVENT THEIR DISCHARGE TO WATERS AND SOILS. THE CLEANUP OF SPILLS SHALL TAKE PRECEDENCE OVER OTHER WORK ON THE PROJECT. BARRELS, PETROPHILIC PADS, TARPS, AND OTHER EQUIPMENT NECESSARY FOR CAPTURING, CONTROLLING, AND DISPOSING OF HAZARDOUS FLUIDS SHALL BE AVAILABLE ON-SITE AT ALL TIMES.
4. PROPER EROSION AND SEDIMENT CONTROL PRACTICES MUST BE USED ON THE CONSTRUCTION SITE AND ADJACENT AREAS TO PREVENT UPLAND SEDIMENTS FROM ENTERING THE NATURAL DRAINAGE SYSTEM. ALL SURFACE AREAS DISTURBED AND ANY EMBANKMENTS OR EXCAVATIONS CREATED BY CONSTRUCTION ACTIVITIES MUST BE PROTECTED USING PLASTIC SHEETING, SILT FENCING, AND/OR OTHER BEST MANAGEMENT PRACTICES AS .
5. LINEAR CONSTRUCTION ACTIVITIES SUCH AS RIGHT-OF-WAY AND EASEMENT CLEARING, ROADWAY DEVELOPMENT, PIPELINES, AND TRENCHING FOR UTILITIES, SHALL BE CONDUCTED TO MEET THE SOIL STABILIZATION REQUIREMENT.
6. IF STRAW MULCH FOR TEMPORARY EROSION CONTROL IS USED, IT SHALL BE APPLIED AT A MINIMUM THICKNESS OF FOUR INCHES.
7. OWNER MAY DIRECT MAINTENANCE AND REPAIR OF TESC MEASURES AND/OR FACILITIES AS THE HIGHEST PRIORITY WORK AT ANY TIME THE TESC MEASURES AND/OR FACILITIES DO NOT MEET THE CURRENT CITY PLAN REQUIREMENTS. ALL TESC MEASURES AND/OR FACILITIES MAY NOT BE SHOWN ON THE PLANS, BUT SHALL BE PROVIDED BASED ON WEATHER CONDITIONS AND CONSTRUCTION PRACTICES AT THE DISCRETION OF THE OWNER.
8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL LOADS ARE SECURED PER RCW 46.61.655.
9. DUST CONTROL MUST BE PROVIDED BY THE CONTRACTOR. THE CONTRACTOR SHALL USE A VACUUM STREET SWEEPER TO REMOVE DUST AND DEBRIS FROM PAVEMENT AREAS AS DIRECTED BY THE OWNER. FLUSHING OF STREETS SHALL NOT BE PERMITTED WITHOUT PRIOR CITY APPROVAL. POWER BROOMS SHALL NOT BE USED, NOR PERMITTED ON SITE.
10. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND MODIFIED TO ACCOUNT FOR CHANGING SITE CONDITIONS (E.G. ADDITIONAL COVER MEASURES, ADDITIONAL SUMP PUMPS, RELOCATION OF DITCHES AND SILT FENCES, PERIMETER PROTECTION ETC.) AS DIRECTED BY THE CITY.
11. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED TO ENSURE CONTINUED PROPER FUNCTIONING. WRITTEN RECORDS SHALL BE KEPT OF WEEKLY REVIEWS OF THE ESC FACILITIES.
12. ANY AREAS OF EXPOSED SOILS THAT WILL NOT BE DISTURBED FOR TWO CONSECUTIVE DAYS DURING THE WET SEASON OR SEVEN DAYS DURING THE DRY SEASON SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED ESC METHODS (E.G., SEEDING, MULCHING, PLASTIC COVERING, ETC.).
13. ANY AREA NEEDING ESC MEASURES THAT DO NOT REQUIRE IMMEDIATE ATTENTION SHALL BE ADDRESSED WITHIN SEVEN (7) DAYS.
14. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A WEEK DURING THE DRY SEASON, TWICE A WEEK DURING THE WET SEASON, OR WITHIN TWENTY FOUR (24) HOURS FOLLOWING A STORM EVENT.
15. COVER MEASURES WILL BE APPLIED IN CONFORMANCE WITH APPENDIX D OF THE SURFACE WATER DESIGN MANUAL.

PIPE LENGTH MEASUREMENTS

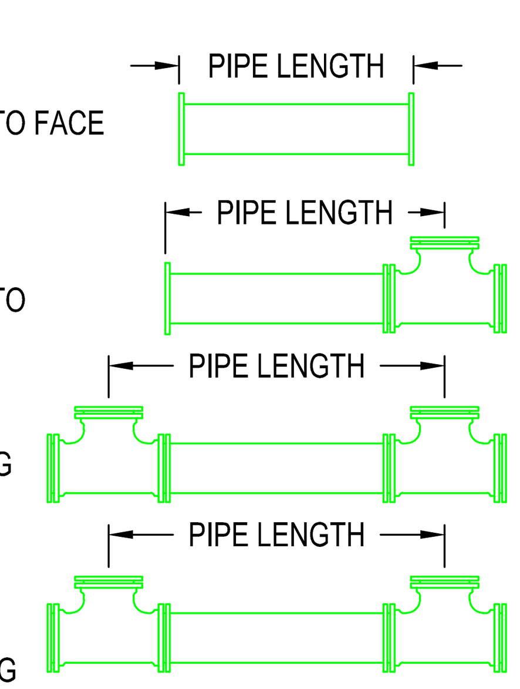
PIPE LENGTHS CALLED OUT ON PLANS ARE MEASURED AS FOLLOWS:

FLANGE x FLANGE (FLxFL) PIPE MEASURED FROM FACE OF FLANGE TO FACE OF FLANGE.

FLANGE x PLAIN END (FLxPE) PIPE MEASURED FROM FACE OF FLANGE TO CENTER OF FITTING.

PLAIN END x PLAIN END (PExPE) PIPE MEASURED FROM CENTER OF FITTING TO CENTER OF FITTING.

RESTRAINED JOINT x RESTRAINED JOINT (RJxRJ) PIPE MEASURED FROM CENTER OF FITTING TO CENTER OF FITTING.



FITTINGS ARE ASSUMED TO BE STANDARD LENGTH 125#, 250# FLANGED OR COMPACT CLASS 350 MECHANICAL JOINTS. CONTRACTOR RESPONSIBLE FOR VERIFYING LENGTHS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO TAKE INTO ACCOUNT ANY VARIATIONS IN FITTING DIMENSIONS.

NORTHING AND EASTING CALLOUT POINTS

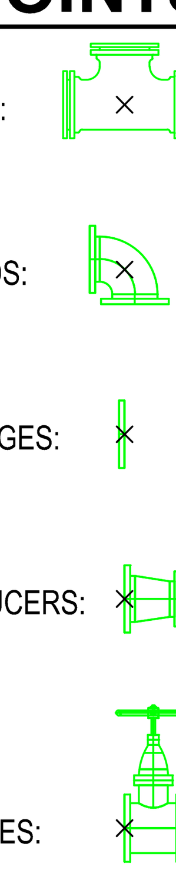
TEES:

BENDS:

FLANGES:

REDUCERS:

VALVES:



ABANDONMENT NOTES

THE CITY SHALL BE SOLE DETERMINER OF APPROPRIATE ABANDONMENT PROCEDURES AND METHODS. CONTRACTOR SHALL COORDINATE WITH THE CITY TO DETERMINE WHETHER TO SALVAGE OR DISPOSE OF REMOVED FACILITIES. UNUSABLE EQUIPMENT SHALL BE DISPOSED OF BY THE CONTRACTOR. THE FOLLOWING METHODS ARE APPROVED ABANDONMENT PROCEDURES FOR TERMINATED FACILITIES.

LIFT STATIONS

UPON THE COMPLETE OPERATION OF TEMPORARY PUMPING SYSTEM AND APPROVAL BY THE CITY IN WRITING, THE CONTRACTOR SHALL CONVERT THE EXISTING WET WELL INTO A MANHOLE AND SHALL ABANDON THE EXISTING DRYWELL. REMOVE ALL PUMPS, PIPES, FITTINGS, TELEMETRY EQUIPMENT, AND ALL OTHER APPURTENANCES FROM INSIDE THE EXISTING PUMP STATION. ALL OF THE REMOVED ITEMS OTHER THAN [ANYTHING TO BE SALVAGED?] SHALL BE HAULED OFF AND DISPOSED ACCORDING TO THE REGULATIONS. [ANYTHING TO BE SALVAGED?] SHALL BE RETURNED TO THE CITY'S SHOP.

SEWER MAINS

1. CUT AND DRAIN ABANDONED SEWER MAINS WHERE EXPOSED DURING CONSTRUCTION. SAW CUT AND REMOVE SHORT SECTIONS OF PIPE.

CONDUIT

1. CONDUIT SHALL BE CUT OFF BELOW GRADE AND BACKFILLED.

EXISTING UTILITIES

1. ALL EXISTING UTILITIES INDICATED ON THE PLANS HAVE BEEN PLOTTED FROM THE BEST INFORMATION AVAILABLE TO THE ENGINEER AND SHOULD THEREFORE BE CONSIDERED APPROXIMATE ONLY AND NOT NECESSARILY COMPLETE. THE SOURCE OF INFORMATION GENERALLY CONSISTS OF CONSTRUCTION RECORDS, UTILITY LOCATES, AND OTHER DATA OBTAINED VERBALLY FROM OFFICIALS ASSOCIATED WITH THE PARTICULAR UTILITY. OWNER AND ENGINEER DO NOT GUARANTEE AND DO NOT ASSUME ANY RESPONSIBILITY FOR THE ACCURACY OF THIS INFORMATION. IT IS UNDERSTOOD THAT OTHER ABOVE GROUND AND UNDERGROUND FACILITIES NOT SHOWN ON THE PLANS MAY BE ENCOUNTERED DURING THE COURSE OF THE WORK. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INDEPENDENTLY VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS SHOWN TO AVOID DAMAGE AND/OR DISTURBANCE TO SUCH UTILITIES, AND TO FURTHER DISCOVER AND AVOID ANY OTHER UTILITIES NOT SHOWN HEREON WHICH MAY BE AFFECTED BY THE IMPLEMENTATION OF THIS PLAN. CONTRACTOR SHALL PRESERVE, PROTECT AND SUPPORT ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION.
2. OVERHEAD UTILITIES: NOT ALL OVERHEAD UTILITIES MAY BE SHOWN ON THE PLANS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE SITE TO INDEPENDENTLY VERIFY ALL OVERHEAD UTILITIES. THE CONTRACTOR SHALL ACCOUNT FOR ACCOMMODATING ALL OVERHEAD UTILITIES IN HIS BID AND NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR FACILITATING OVERHEAD UTILITIES.
3. POWER, TELEPHONE, GAS AND CABLE: WHERE THESE UTILITIES CROSS THE PROPOSED SEWER MAIN, THE DEPTH OF EACH IS SHOWN ON THE PROFILES AND IS BASED ON TYPICAL LAYING DEPTHS FOR EACH OF THESE UTILITIES. ACTUAL DEPTHS ARE UNKNOWN AND MAY VARY SIGNIFICANTLY. CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY IF UTILITY CROSSING DEPTH CONFLICTS ARISE.
4. PROVIDE STYROFOAM CUSHION BETWEEN PIPING AT PIPE CROSSINGS WHERE PIPES CROSS WITH LESS THAN 12 INCHES OF VERTICAL SEPARATION. A SAND CUSHION MAY BE USED IN AREAS WHERE ADEQUATE COMPACTION CAN BE ACHIEVED AND AS APPROVED BY THE OWNER.
5. THE CONTRACTOR SHALL MAINTAIN SEWER AND DOMESTIC WATER SERVICE TO ALL EXISTING CUSTOMERS AT ALL TIMES, EXCEPT UNDER PLANNED AND APPROVED SERVICE OUTAGES.
6. THE CONTRACTOR SHALL NOTIFY EACH AFFECTED CUSTOMER A MINIMUM OF 72 HOURS IN ADVANCE OF ANY SERVICE DISRUPTION. NO SHUTDOWNS SHALL BE ALLOWED ON MONDAYS, FRIDAYS OR THE DAYS BEFORE AND AFTER A HOLIDAY.

TO BE UPDATED

TRAFFIC CONTROL

1. THE CONTRACTOR SHALL PREPARE TRAFFIC CONTROL PLAN(S) SHOWING SIGNAGE AND FLAGGERS AS NEEDED TO COMPLETE THESE IMPROVEMENTS AND SUBMIT TO CITY FOR APPROVAL. ALL TRAFFIC CONTROL DEVICES AND PROCEDURES SHALL COMPLY WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), WSDOT AND THE CITY OF LYNNWOOD STANDARDS.
2. THE CONTRACTOR SHALL PROVIDE FOR EMERGENCY VEHICLE ACCESS WITHIN AND ADJACENT TO THE CONSTRUCTION SITE. THE CONTRACTOR SHALL PROVIDE 48-HOUR NOTICE TO EMERGENCY DEPARTMENTS WHICH MAY BE AFFECTED BY ACTIONS OF THE CONTRACTOR.
3. AT NO TIME SHALL THE ENTIRE ROAD BE CLOSED DURING CONSTRUCTION.

RICHARD L. BALLARD — STATE OF WASHINGTON — 32878 — REGISTERED PROFESSIONAL ENGINEER

TONY V. PARDI — STATE OF WASHINGTON — 26978 — REGISTERED PROFESSIONAL ENGINEER

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22722 29th Drive SE, Suite 210

CITY OF LYNNWOOD

LIFT STATION 8 IMPROVEMENTS

PRELIMINARY

GENERAL INFORMATION

LYNNWOOD WASHINGTON

ENGINEER: AHF	SAVE DATE: Jun 6, 2014	CLIENT: LYNN	JOB NO.: 114-050
REVIEWED: EH	PLOT DATE: Mar 10, 2016	FILENAME: LS8-D-GEN.DWG	

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: G01

SHEET NO.: 2 YY

PK 9

SDMH 2657
RIM 386.4'
I.E. 374.5' SE, 54" CMP
I.E. 374.6' N, 54" CMP

OIL SEPARATOR
RIM 386.2'

16' SEWER ESMT. AFN
2140830

54" CMP ST

33' UTILITY EASEMENT

SMH 2659
RIM 385.9'
I.E. 372.7' S,
I.E. 372.7' NW
I.E. 373.2' W
I.E. 373.6' NW
(TOP PIPE=382.3')

SMH 2419
RIM 386.3'
I.E. 373.1' N
I.E. 373.1' SE
I.E. 378.2 W,

PK21

PK27

SDMH 4867
RIM 383.8'
I.E. 376.9' N, 10" CONC
I.E. 379.8' NE, 12" CONC
I.E. 375.0' SE, 18" CMP
I.E. 374.9' SW, 36" CONC
I.E. 374.3' NW, 36" CONC (PLUGGED)

SDMH 4261
RIM 394.6'
I.E. 373.1' NW, 54" CMP
I.E. 373.1' SE, 54" CMP

10" CONC ST
12" CONC ST
36" CONC ST
18" CMP ST

EXISTING ROCK RETAINING
WALL, TO BE REMOVED

EXISTING TREE,
TO BE REMOVED

EXISTING HEDGE,
TO BE REMOVED

SMH 3934
RIM 384.0'
I.E. 371.4' NW
I.E. 371.4' NE, SW

SMH 2660
RIM 385.2'
I.E. 371.8' N,
I.E. 371.1' SE,

DT12
DT14

SHED

50'

100'

PROPERTY LINE

SS WELL
TOP CONC RIM = 386.9'±

COVERED CONCRETE PAD FOR ELEC CONTROL PANEL

FND REBAR & CAP

ROCK RETAINING WALL

385
386
387
384
383

EXISTING SITE PLAN
1" = 10'

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CITY OF LYNNWOOD
LIFT STATION 3
IMPROVEMENTS

PRELIMINARY

EXISTING SITE PLAN

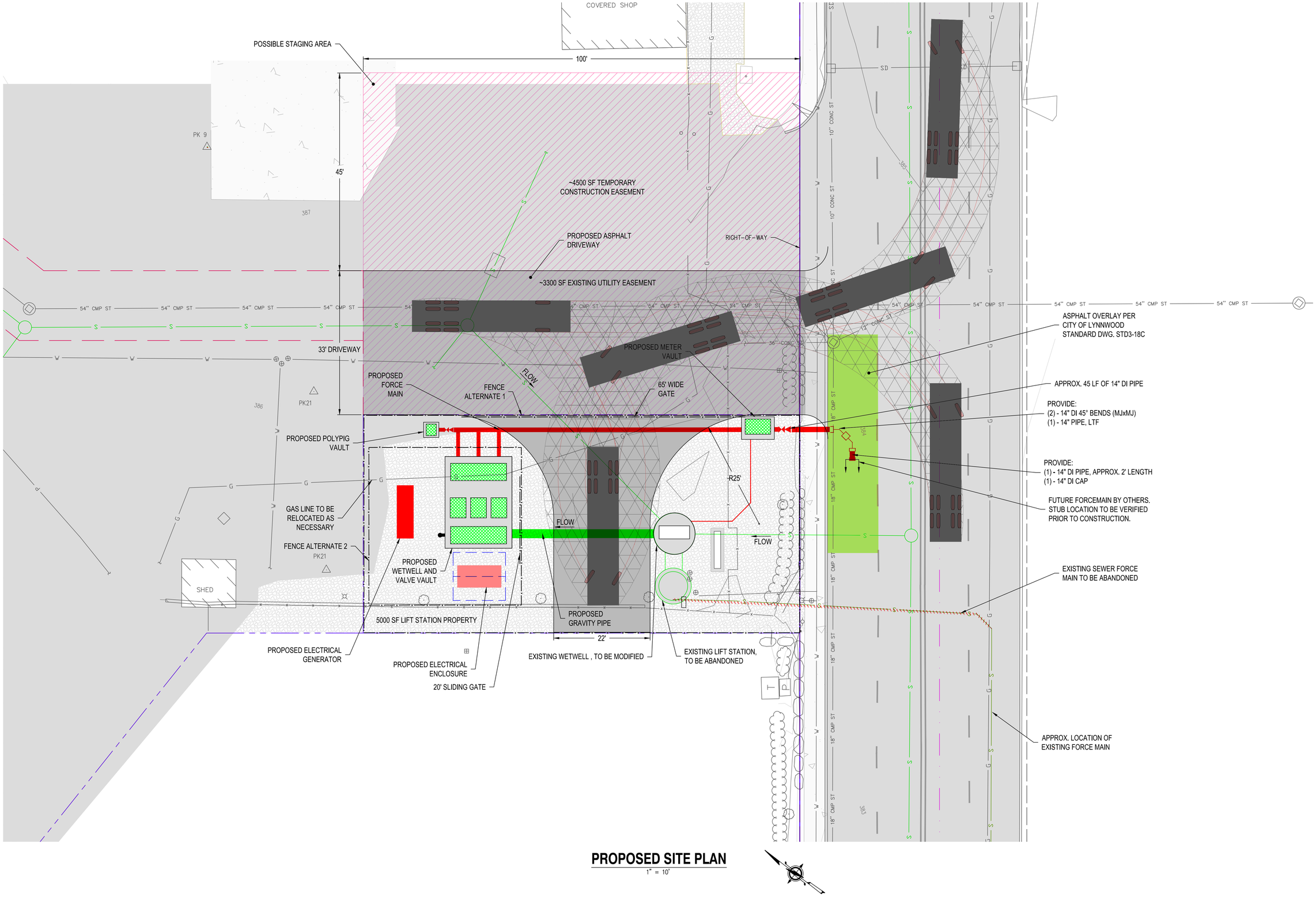
LYNNWOOD
WASHINGTON

REVISIONS			
NO.	DATE	DESCRIPTION	BY
			REVIEW

JOB NO.: 114-050
CLIENT: LYNN
FILENAME: LS3-D-CIV01.DWG
SAVE DATE: Dec 11, 2015
PLOT DATE: Mar 10, 2016
ENGINEER: XXX
REVIEWED: EH

SCALE: SHOWN
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: C01
SHEET NO.: 3 YY



PROPOSED SITE PLAN

1" = 10'

L. BALLARD — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON

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CITY OF LYNNWOOD
LIFT STATION 3
IMPROVEMENTS

PRELIMINARY

PROPOSED SITE PLAN

LYNNWOOD WASHINGTON

REVISIONS			
NO.	DATE	DESCRIPTION	BY
			REVIEW

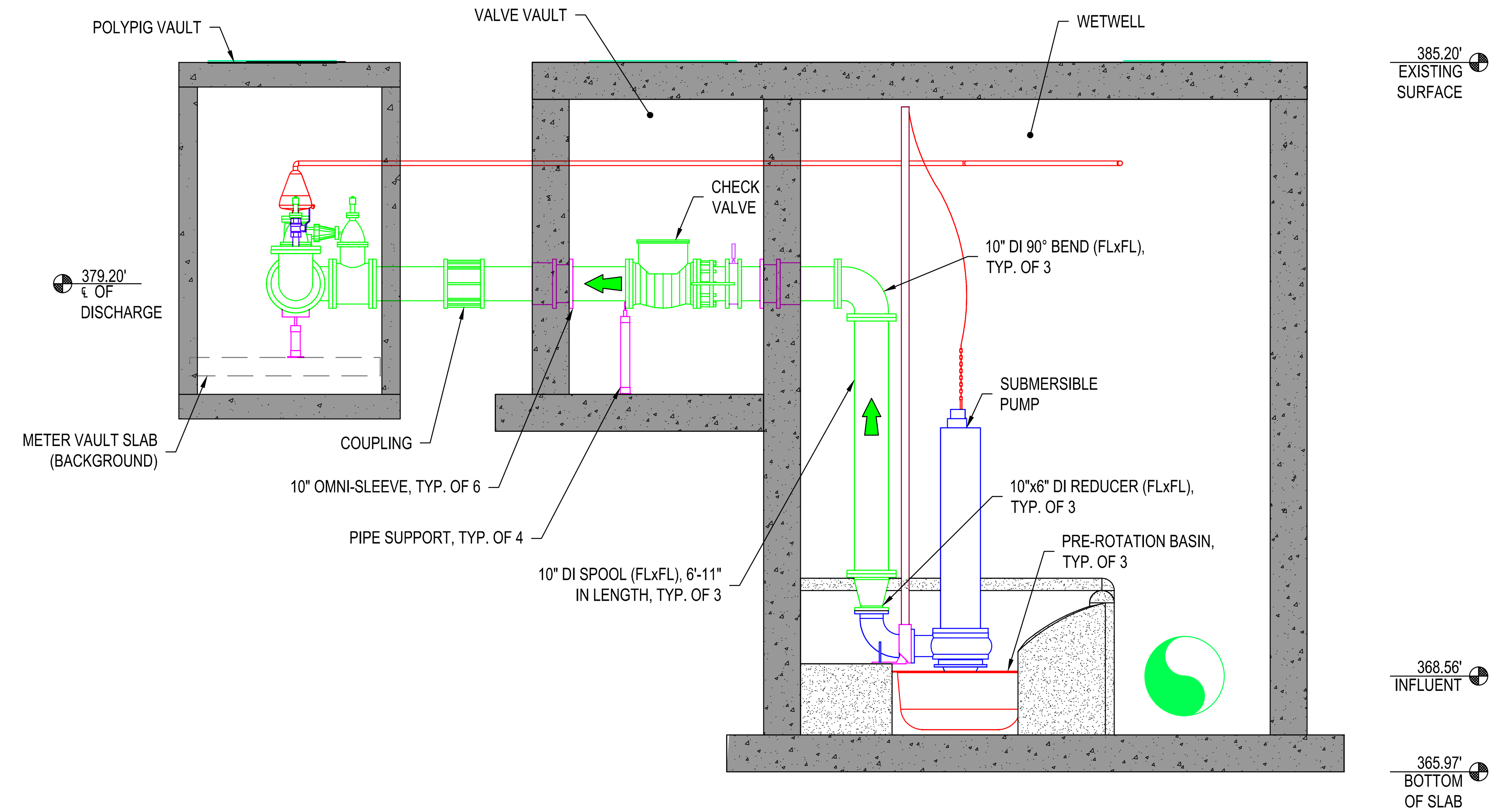
ENGINEER: XXX
REVIEWED: EH
SAVE DATE: Jan 20, 2016
PLOT DATE: Mar 10, 2016
CLIENT: LYNN
FILENAME: LS03-D-CIV02.DWG
JOB NO.: 114-050

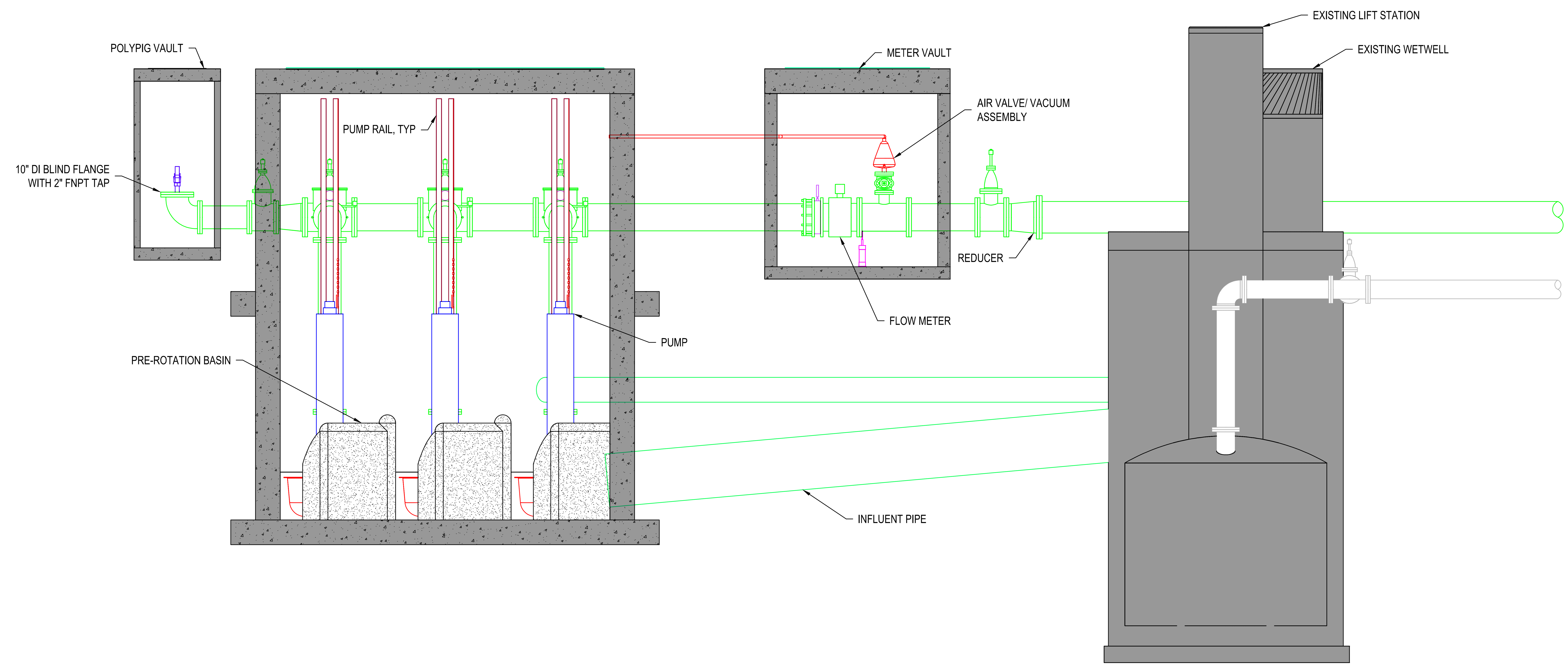
SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: C02
SHEET NO.: 4 YY





PROPOSED MECHANICAL PROFILE (A)

½" = 1'-0"

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CITY OF LYNNWOOD
LIFT STATION 8
IMPROVEMENTS

PRELIMINARY

MECHANICAL PLAN

LYNNWOOD WASHINGTON

ENGINEER: XXX | SAVE DATE: Oct 29, 2015 | CLIENT: LYNN | JOB NO.: 114-050
REVIEWED: EH | PLOT DATE: Mar 10, 2016 | FILENAME: LS8-D-MEX02.DWG

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

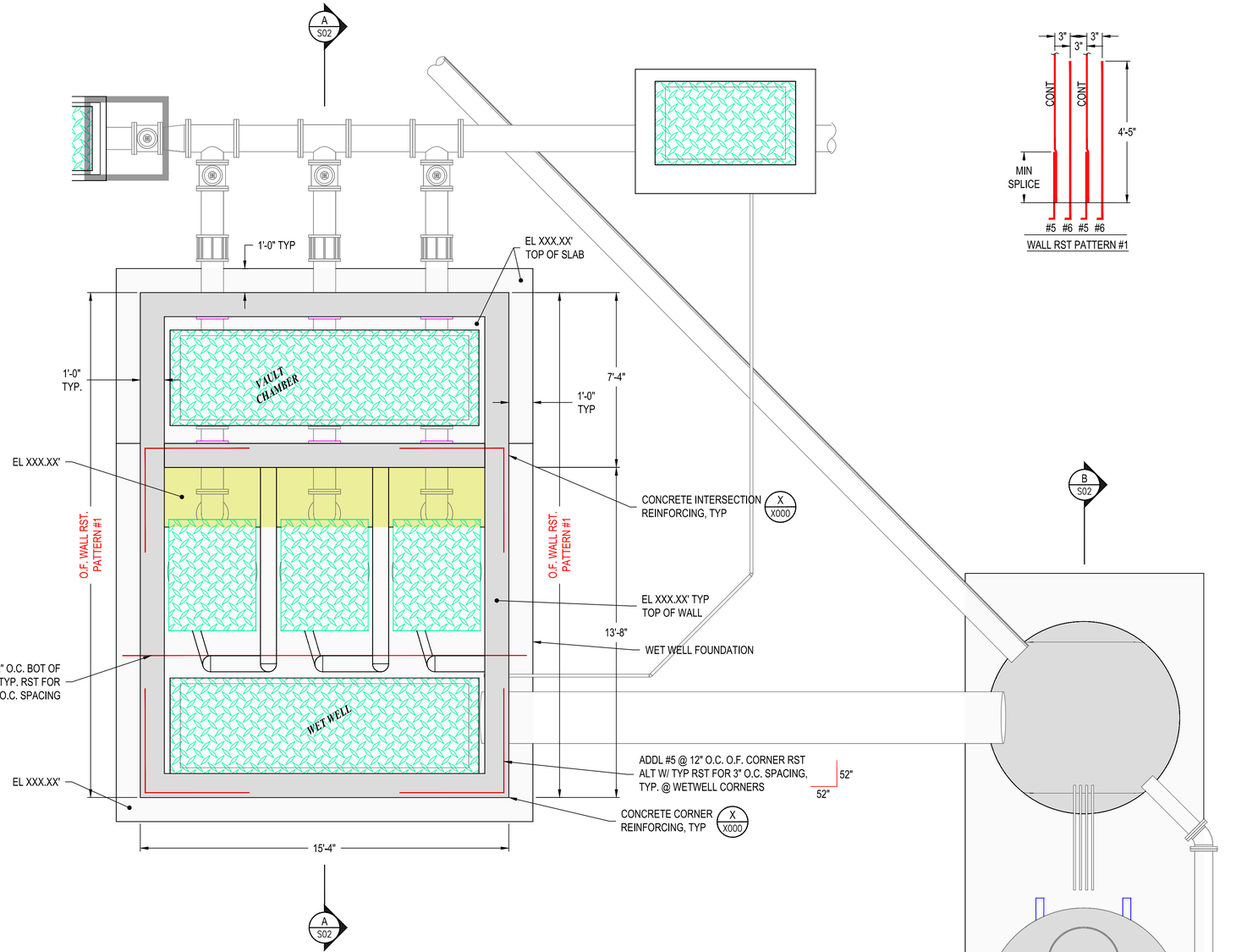
SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: M01

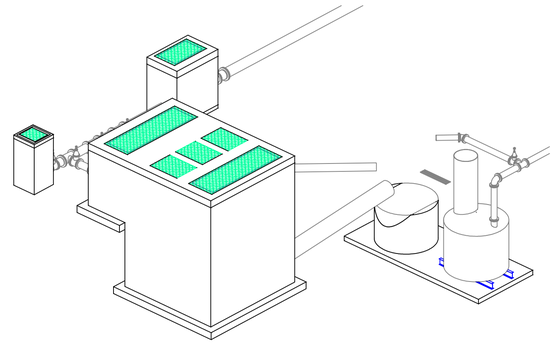
SHEET NO.: 5 YY



FOUNDATION PLAN

3/8" = 1'-0"

WALL RST PATTERN #1



FOUNDATION OBLIQUE

NOT TO SCALE

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CITY OF LYNNWOOD
LIFT STATION 6
IMPROVEMENTS

TRANE

STRUCTURAL FOUNDATION PLAN

PRELIMINARY

JOB NO.:	114-050
CLIENT:	LYNN
FILENAME:	LS6-D-STR01.DWG
SAVE DATE:	Mar 10, 2016
PLOT DATE:	Mar 10, 2016
ENGINEER:	CGR
REVIEWED:	JMC

REVISIONS

NO.	DESCRIPTION	DATE	BY	REVIEW

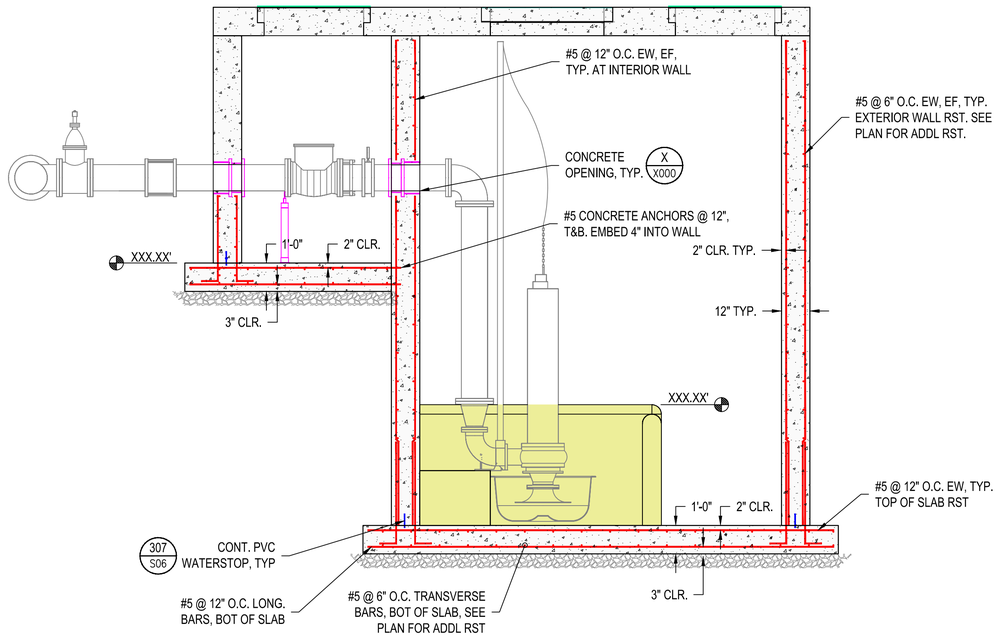
SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: S01

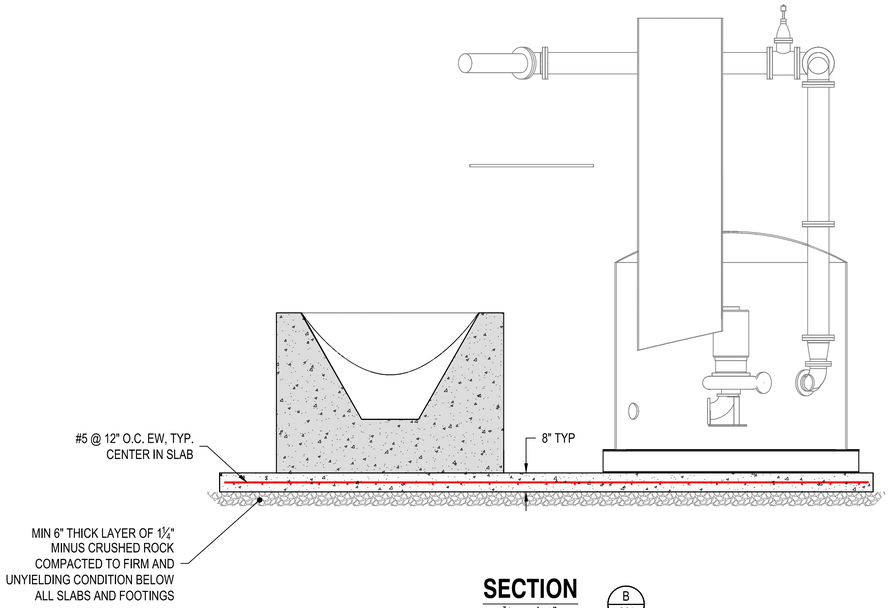
SHEET NO.: 6 YY



SECTION

3/8" = 1'-0"

A / S01



SECTION

3/8" = 1'-0"

B / S01

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CITY OF LYNNWOOD
LIFT STATION 3
IMPROVEMENTS

STRUCTURAL SECTIONS

PRELIMINARY

TRANE

ENGINEER: CGR	JOB NO.: 114-059
REVIEWED: JMC	CLIENT: LYNN
SAVE DATE: Mar 10, 2016	FILENAME: LS#3-STR02.DWG
PLOT DATE: Mar 10, 2016	

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN

0" 1" 2"

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: S02

SHEET NO.: 7 YY

GENERAL STRUCTURAL NOTES (300 / –)

GEOTECHNICAL PARAMETERS:

MINIMUM FROST DEPTH	18"
MAXIMUM NET BEARING	4,000 PSF OVER FILL, 6,000 PSF OVER GLACIAL TILL
AT-REST LATERAL EARTH PRESSURE	90 PCF SATURATED
GROUND WATER TABLE	AT GRADE
SOILS REPORT REFERENCE	GEO REPORT, HWA GEOSCIENCE INC. AUG. 2009
TRAFFIC SURCHARGE	100 PSF
SEISMIC SOIL LOAD	10 PSF (TRIANGULAR)

OTHER LOADING PARAMETERS:

WIND LOAD	115 MPH, EXPOSURE C
SNOW LOAD	25 PSF
EARTHQUAKE LOAD	LAT 47.82227, LONG 122.30876, SOIL TYPE C

OTHER DESIGN VALUES USED:

RISK CATEGORY	iii - WASTEWATER FACILITY
CONCRETE	4,000 PSI WITH 60,000 PSI REINFORCING
CMU	1,500 PSI WITH 60,000 PSI REINFORCING
STEEL	A36 FOR PLATES, A992 FOR OTHER
TIMBER	SPRUCE-PINE FIR, NO 2 OR BETTER

LIVE LOADS:

ROOF	20 PSF
TRAFFIC	60 PSF
FLOOR	125 PSF (LIGHT MANUFACTURING)

CRITERIA:

ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, AND THE INTERNATIONAL BUILDING CODE (2012 EDITION)

SPECIAL INSPECTIONS, TESTS, AND OBSERVATIONS:

SPECIAL INSPECTIONS AND TESTS SHALL INCLUDE THE FOLLOWING. REFER TO IBC SECTION 1704 AND 1707 FOR DETAILS.

1. SPECIAL INSPECTIONS BY THE GEOTECHNICAL ENGINEER INCLUDING:
   - 1.1. SITE EXCAVATION AND GRADING
   - 1.2. PLACEMENT OF STRUCTURAL FILL AND SOIL COMPACTION
   - 1.3. VERIFICATION OF SOIL-BEARING CAPACITY
2. CONCRETE PLACEMENT AT CONCRETE CONSTRUCTION: CONTINUOUS, SEE ALSO SECTION 1704.4 OF THE INTERNATIONAL BUILDING CODE.
3. REINFORCEMENT AT CONCRETE CONSTRUCTION: PERIODIC, SEE ALSO SECTION 1704.4.
4. MASONRY CONSTRUCTION, INCLUDING PLACEMENT OF MASONRY UNITS, MORTAR REINFORCEMENT AND STRUCTURAL CONNECTIONS: PERIODIC, SEE ALSO SECTION 1704.5.3.
5. GROUT PLACEMENT AT MASONRY CONSTRUCTION: CONTINUOUS, SEE ALSO SECTION 1704.5.3.
6. WOOD-FRAMED LATERAL-FORCE RESISTING SYSTEM: PERIODIC, SEE ALSO SECTION 1707.3.
7. TESTING OF CONCRETE FOR SPECIFIED COMPRESSIVE STRENGTH (FC), AIR CONTENT AND SLUMP. SEE ALSO TABLE 1704.4 OF THE INTERNATIONAL BUILDING CODE.
8. VERIFICATION OF SPECIFIED COMPRESSIVE STRENGTH (FM) OF MASONRY PRIOR TO CONSTRUCTION AND EVERY 5,000 SQUARE FEET DURING CONSTRUCTION. SEE ALSO TABLE 1708.1.4 OF THE INTERNATIONAL BUILDING CODE.
9. STRUCTURAL OBSERVATION BY A REGISTERED DESIGN PROFESSIONAL IN ACCORDANCE WITH IBC 1709 SHALL BE PROVIDED.

GENERAL:

LINES SHOWN ON DRAWINGS MAY BE ASSOCIATED WITH CAD MODELING AND MAY NOT REPRESENT REQUIRED OR ALLOWED JOINTS. SEE DETAILS FOR CLARIFICATION ON REQUIRED AND ALLOWED JOINTS.

REINFORCED CONCRETE:

1. REINFORCING STEEL SHALL BE DETAILED (INCLUDING HOOKS AND BENDS) IN ACCORDANCE WITH ACI 315-99 AND 318-08. LAP ALL REINFORCEMENTS IN ACCORDANCE WITH THE "REINFORCING SPLICE AND DEVELOPMENT LENGTH SCHEDULE" - SEE THIS SHEET. PROVIDE CORNER BARS AT ALL WALL INTERSECTIONS PER DETAIL 303. LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 8" AT SIDES AND ENDS.
2. NO BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL BE FIELD BENT UNLESS SPECIFICALLY DETAILED OR APPROVED BY THE STRUCTURAL ENGINEER.
3. A 6" WATERSTOP SHALL BE PLACED AT ALL BELOW GRADE CONCRETE SLAB AND WALL CONSTRUCTION JOINTS AND AS SHOWN TO PROVIDE A WATERTIGHT STRUCTURE.
4. CONCRETE PROTECTION FOR REINFORCING STEEL SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:
   - 4.1. FOOTINGS AND OTHER UNIFORMED SURFACES CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH . . . . 3"
   - 4.2. FORMED SURFACES EXPOSED TO EARTH (WALLS BELOW GRADE), WATER OR WEATHER (#6 BARS OR LARGER) . . . . 2"
   - 4.3. COLUMN TIES OR SPIRALS AND BEAM STIRRUPS . . . . 2"
   - 4.4. SLABS AND INTERIOR FACES . . . . 2"

ABBREVIATIONS:

AL - ALUMINUM
CHK - CHECKERED
CL - CENTERLINE
CLR - CLEAR
EA - EACH
EF - EACH FACE
FB - FLAT BAR
HORZ - HORIZONTAL
LLV - LONG LEG VERT
O.C. - ON CENTER
PL - PLATE
RB - ROUND BAR
RST - REINF. STEEL
SST - STAINLESS STEEL
T&B - TOP & BOTTOM
VERT - VERTICAL

REINFORCEMENT SPLICE AND DEVELOPMENT SCHEDULE

	MINIMUM STRAIGHT DEVELOPMENT LENGTHS		MINIMUM LAP SPLICE LENGTHS	MINIMUM EMBEDMENT LENGTHS
BAR	TOP BARS	OTHER BARS	TOP BARS	ALL BARS
#3	19"	15"	25"	6"
#4	25"	19"	33"	7"
#5	31"	24"	41"	9"
#6	37"	29"	49"	10"
#7	54"	42"	71"	12"

"TOP BARS" ARE HORIZONTAL BARS WITH MORE THAN 12" DEPTH OF CONCRETE CAST BELOW THEM.
IF CLEAR CONCRETE COVER IS LESS THAN 2x THE DIAMETER OF THE BAR OR THE CENTER-TO-CENTER SPACING IS LESS THAN (4) BAR DIAMETERS, THEN VALUES SHALL BE INCREASED BY 43%
SIDE COVER MUST BE EQUAL TO OR GREATER THAN 2-1/2"
END COVER FOR 90° HOOKS MUST BE EQUAL TO OR GREATER THAN 2"

CMU ANCHORS FOR THE USE IN BOTH GROUTED AND UNGROUTED CMU CELLS SHALL BE EITHER HILTI HIT-HY 70 INJECTABLE MORTAR, SIMPSON STRONG-TIE ET-HP ANCHORING ADHESIVE, OR POWERS AC100+ GOLD ADHESIVE ANCHORS.

WHERE SIZE IS CALLED OUT ON THE DRAWINGS, PROVIDE MINIMUM EMBEDMENT DEPTHS AS SHOWN ON THE FOLLOWING TABLES. PROVIDE MINIMUM EDGE DISTANCES AND SPACING AS SHOWN ON THE FOLLOWING TABLES UNLESS SPECIFICALLY DETAILED OTHERWISE.

INSTALL ANCHORS IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

NOTIFY OWNER 24 HOURS IN ADVANCE OF INSTALLATION OF ALL ANCHORS.

WHERE SIZE IS NOT CALLED OUT, ANCHOR SHALL BE SELECTED BASED ON DESIGN LOADS. IF THE MINIMUM EDGE DISTANCE AND/OR MINIMUM SPACING CAN NOT BE ACHIEVED, REFER TO PRODUCT INFORMATION FOR REDUCTION IN ALLOWABLE LOADS.

FORCES ARE DETERMINED BY THE FOLLOWING FORMULA: (Ps / Pt) + (Vs / Vt) = 1

WHERE:
Ps = APPLIED SERVICE TENSION LOAD
Pt = ALLOWABLE SERVICE TENSION LOAD
Vs = APPLIED SERVICE SHEAR LOAD
Vt = ALLOWABLE SERVICE SHEAR LOAD

THE ABOVE FORMULA IS FOR THE ALLOWABLE LOADS FOR ANCHORS SUBJECTED TO COMBINED TENSION AND SHEAR.

GROUTED CMU ANCHORS
HILTI HIT-HY 70, SIMPSON STRONG-TIE ET-HP & POWERS AC100+ GOLD

DIA. OF ROD (INCHES) OR REBAR SIZE NO.	MIN. EDGE DISTANCE (INCHES)	MIN. EMBEDMENT (INCHES)	MIN. ANCHOR SPACING (INCHES)	ALLOWABLE LOAD BASED ON BOND STRENGTH (POUNDS)	
				TENSION	SHEAR
3/8	12	3-3/8	(1) PER CELL	1,000	845
1/2	12	4-1/2	(1) PER CELL	1,000	1,470
5/8	12	5-5/8	(1) PER CELL	1,140	1,595
3/4	12	6-3/4	(1) PER CELL	1,200	1,625
#3	12	3-3/8	(1) PER CELL	1,000	850
#4	12	4-1/2	(1) PER CELL	1,000	1,355
#5	12	5-5/8	(1) PER CELL	1,140	1,355

UNGROUTED CMU ANCHORS
HILTI HIT-HY 70, SIMPSON STRONG-TIE ET-HP & POWERS AC100+ GOLD

DIA. OF ROD (INCHES) OR REBAR SIZE NO.	MIN. EDGE DISTANCE (INCHES)	MIN. EMBEDMENT (INCHES)	MIN. ANCHOR SPACING (INCHES)	ALLOWABLE LOAD BASED ON BOND STRENGTH (POUNDS)	
				TENSION	SHEAR
3/8	12	3	(1) PER CELL	280	265
1/2	12	3	(1) PER CELL	280	265
5/8	12	3	(1) PER CELL	280	265
3/4	12	3	(1) PER CELL	280	265
#3	12	3	(1) PER CELL	280	265
#4	12	3	(1) PER CELL	280	265
#5	12	3	(1) PER CELL	280	265

CMU ANCHOR (301 / –)

CONCRETE ANCHORS SHALL BE EITHER HILTI HIT-RE 500-SD INJECTABLE MORTAR, SIMPSON STRONG-TIE SET-XP ANCHORING ADHESIVE, OR POWERS PE1000+ ADHESIVE ANCHORS AS SPECIFIED. WHERE SIZE IS CALLED OUT ON THE DRAWINGS, PROVIDE MINIMUM EMBEDMENT DEPTHS AS SHOWN ON THE FOLLOWING TABLES. PROVIDE MINIMUM EDGE DISTANCES AND SPACING AS SHOWN ON THE FOLLOWING TABLES UNLESS SPECIFICALLY DETAILED OTHERWISE.

INSTALL ANCHORS IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

NOTIFY OWNER 24 HOURS IN ADVANCE OF INSTALLATION OF ALL ANCHORS.

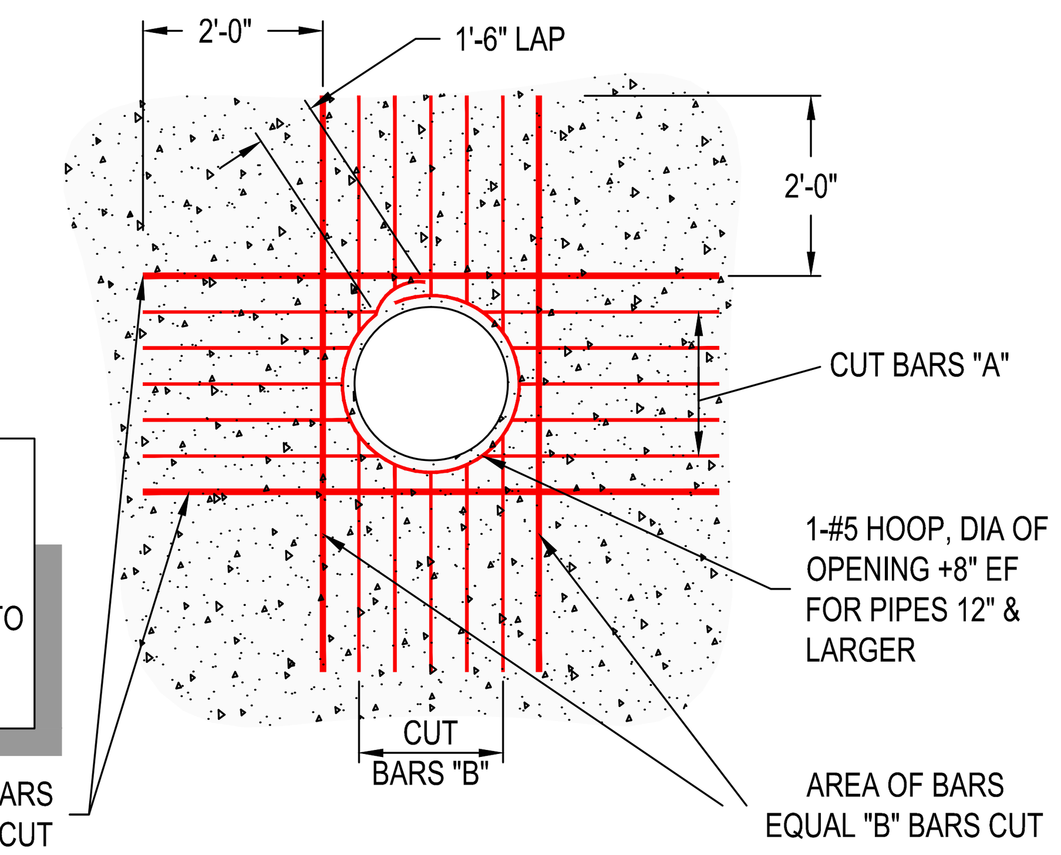
WHERE SIZE IS NOT CALLED OUT, ANCHOR SHALL BE SELECTED BASED ON DESIGN LOADS.IF THE MINIMUM EDGE DISTANCE AND/OR MINIMUM SPACING CAN NOT BE ACHIEVED, REFER TO PRODUCT INFORMATION FOR REDUCTION IN ALLOWABLE LOADS.

CONCRETE ANCHORS
HILTI HIT-RE 500-SD, SIMPSON STRONG-TIE SET-XP & POWERS PE1000+

DIA. OF ROD (INCHES) OR REBAR SIZE NO.	MIN. EDGE DISTANCE (INCHES)	MIN. EMBEDMENT (INCHES)	MIN. ANCHOR SPACING (INCHES)	ALLOWABLE LOAD BASED ON BOND STRENGTH (POUNDS)	
				TENSION	SHEAR
1/2	2-1/2	2-3/4	2-1/2	1,027	2,210
5/8	3-1/8	3-1/8	3-1/8	1,312	2,827
3/4	3-3/4	3-1/2	3-3/4	1,556	3,351
7/8	4-3/8	3-1/2	4-3/8	1,556	3,351
#4	2-1/2	4-1/2	2-1/2	1,520	3,618
#5	3-1/8	5-5/8	3-1/8	1,775	5,494
#6	3-3/4	6-3/4	3-3/4	2,225	7,570
#7	4-3/8	7-7/8	4-3/8	2,440	9,428
#8	5	9	5	4,520	11,507

CONCRETE ANCHOR (302 / –)

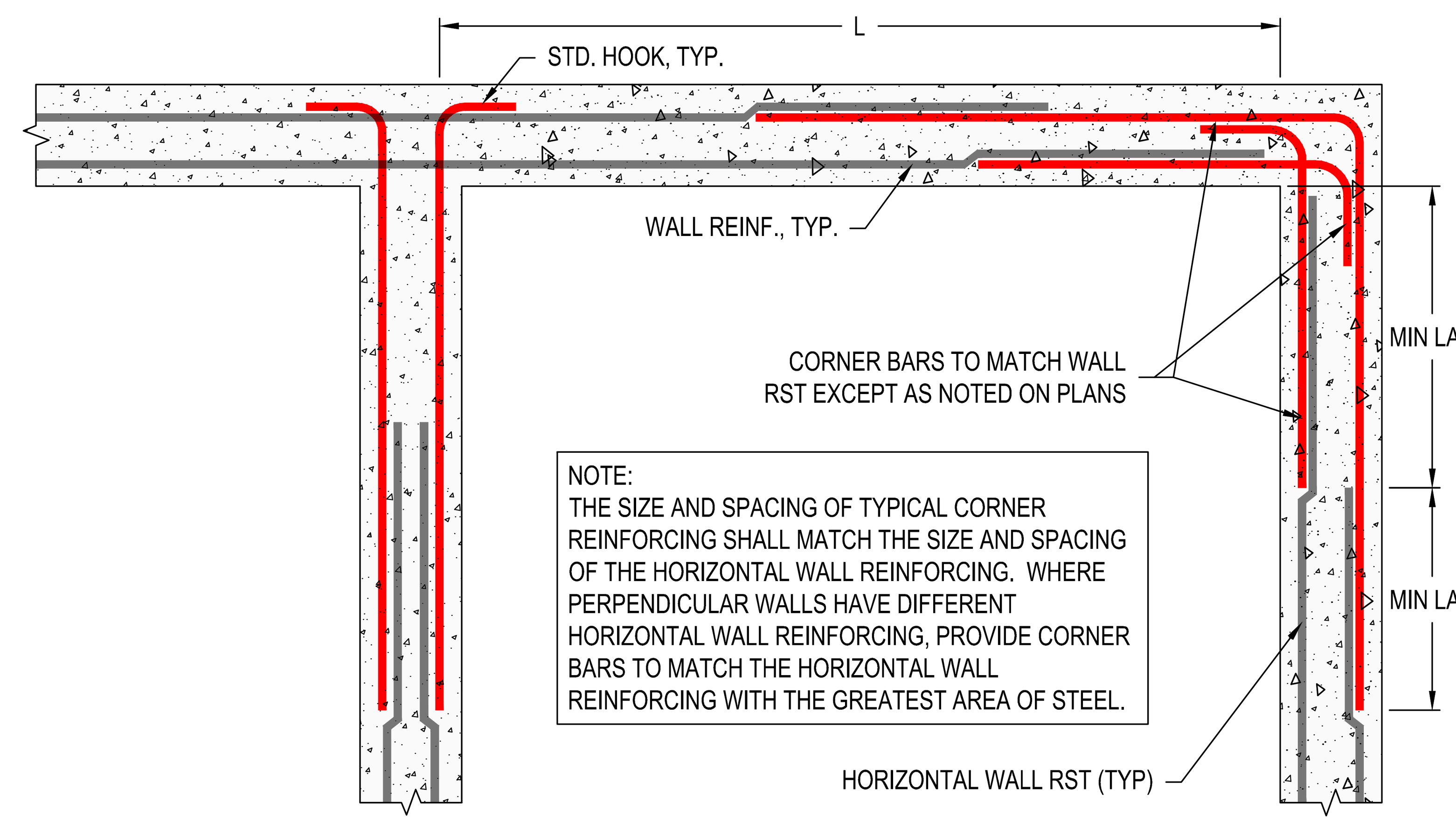
NOTE: THIS DETAIL USED FOR SINGLE PENETRATIONS 4" IN DIAMETER AND LARGER, AND IN EQUIVALENT GROUPS OF SMALLER DIAMETER PENETRATIONS. REFER TO MECHANICAL PLANS FOR SIZE AND LOCATION OF PIPE PENETRATIONS.



NOTE: NOT ALL PENETRATIONS ARE SHOWN ON STRUCTURAL PLANS.

PENETRATION AND OPENING REINFORCEMENT (308 / TYP)

NOT TO SCALE



TYPICAL CONCRETE WALL INTERSECTION / CORNER (310 / TYP)

1" = 1'-0"

JON MARSHALL CONNER — STATE OF WASHINGTON — 44672 — STRUCTURAL ENGINEER — PROFESSIONAL
TONY V. PARDI — STATE OF WASHINGTON — 26978 — REGISTERED PROFESSIONAL ENGINEER

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CITY OF LYNNWOOD
LIFT STATION 8 IMPROVEMENTS
PRELIMINARY
TRANE

STRUCTURAL NOTES AND DETAILS

JOB NO.: 114-050
CLIENT: LYNN
SAVE DATE: Mar 10, 2016
ENGINEER: CGR
FILENAME: LS8-D-STR03.DWG
PLOT DATE: Mar 10, 2016
REVIEWED: JMC

REVISIONS

NO.	DATE	DESCRIPTION	BY	REVIEW

SCALE: SHOWN
0" 1" 2"
DRAWING IS FULL SCALE WHEN BAR MEASURES 2"

DWG NO.: S03
SHEET NO.: 8
YY